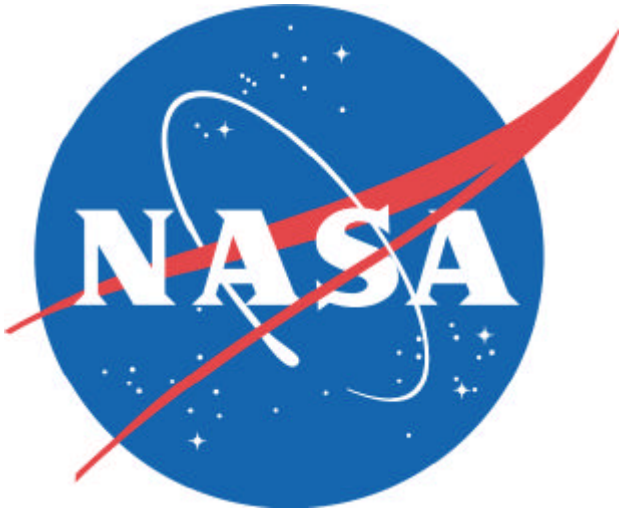
HOWI 8683-U020 Baseline
May 11, 2000

Responsible Office: UM/Space Utilization and Product Development Division
Subject: HEDS Flight Integration Requirements & Strategic Utilization Planning Process



OFFICE WORK INSTRUCTION

Human Exploration and Development of Space
HEDS
Flight Integration Requirements
&
Strategic Utilization
Planning Process

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Process

Approved and signed by

Joseph H. Rothenberg
Lead Associate Administrator
Human Exploration and Development of Space

Dr. Arnauld E. Nicogossian
Associate Administrator
Life and Microgravity Sciences and Applications

DOCUMENT HISTORY LOG

Status (Baseline/ Revision/ Canceled)	Document Revision	Effective Date	Description
Baseline		5-11-2000	This OWI integrates the content and supercedes OWI HOWI8683-MO21RevA and HOWI 7000-UO11Rev B.

1. **Purpose**

The purpose of this OWI is to document the process used for the HEDS Flight Integration Requirements & Strategic Utilization Planning Process for the Space Shuttle (SSP) and International Space Station (ISS) Programs.

The Associate Administrators (AAs) for the Office of Space Flight (OSF) and the Office of Life and Microgravity Sciences and Applications (OLMSA) representing the HEDS Enterprise are responsible for maintaining this document. The controlled version of the document is available on the World Wide Web (WWW) via the HQ ISO 9000 Document Library for the ISO 9000 QMS at *http://hqiso9000.hq.nasa.gov*. By definition, any printed version of this OWI is uncontrolled. Any proposed revision to this document is submitted by the HEDS AAs or their designee. The HEDS AAs or their designee, authorizes approval of the revision after an internal review by the Document Control Board.

2. **Scope and Applicability**

This OWI describes the process used by personnel within NASA Headquarters, HEDS Enterprise to initiate and complete the HEDS Flight Integration Requirements & Strategic Utilization Planning Process for both the Space Shuttle (SSP) and (ISS) International Space Station Programs.

Within OLMSA, the Space Utilization and Product Development Division (UM) is responsible for this process working in close coordination with the OLMSA Research Discipline Divisions and the Office of Space Flight.

This OWI is organized as an integrated product that captures four key subject areas involved in the HEDS Flight Integration Requirements & Strategic Utilization Planning Process for both SSP and ISS.

The four subject areas addressed are as follows:

1. OLMSA Payload Planning Process
2. Oversight of OLMSA Flight Integration and Strategic Utilization Products
3. ISS US Partner Utilization Planning Process (PUP)
4. ISS Consolidated Utilization Planning Process (COUP)

This OWI does not replace or revise existing official documentation for tactical utilization planning processes used in the ISS.

3. **Definitions**

3.1 Flight Planning Products (OLMSA): Lists of payloads prepared, maintained or referenced by Code UM in coordination with the OLMSA Research Discipline Divisions and Space Station Utilization Board Working Group. These flight planning products are used to guide the detailed mission planning and integration activities of the Program Offices for the Space Shuttle (SSP) and the International Space Station (ISS) at NASA Johnson Space Center. The following documents are Flight Planning Products. OLMSA Secondary Payload Lists, Approved NASA Form 1628, Request for Flight on the Space Shuttle and Contingency Call-Up Lists.

3.2 Research Discipline Divisions: Within OLMSA, includes the Divisions for Life Sciences (Code UL), Microgravity Research (Code UG) and Space Utilization and Product Development Division (Code UM). Together with the other user organizations (See Section 3.3), Codes UL and UG are represented in a Working Group which reviews and prioritizes user requirements for the SSP and ISS. The Director, Code UM or his designated representative chairs the WG.

3.3 User Organizations: This includes the OLMSA Research Divisions and the NASA Headquarters offices of Earth Science (Code Y), Space Flight (Code M), Space Science (Code S); and Aeronautics and Space Technology (Code R) and external sponsored organizations (DOD and Non-partner organizations).

3.4 COP: Composite Operations Plan - The annual allocation of ISS utilization resources (volume, weight, MLE's, etc.) to the International Partners

3.5 CUP: Composite Utilization Plan - The annual consolidation of all the ISS International Partner PUPs

3.6 COUP: Consolidated Operations and Utilization Plan - A consolidation of the COP and the CUP

3.7 ISSPO: International Space Station Program Office at JSC

3.8 MCB: Multilateral Control Board - Top level ISS International Partner control board

3.9 SSUB: Space Station Utilization Board - Headquarters level board responsible for prioritizing ISS research resources between Codes U, Y, S and M; Chaired by the NASA Chief Scientist.

3.10 UOP: User Operations Panel - Strategic level ISS International Partner utilization panel. The OLMSA Code UM Division Director represents NASA concerning utilization matters and coordinates with other members of the panel in NASA's interest

3.11 PUP: Partner Utilization Plan – The annual individual ISS partner strategic plan for utilization of Space Station over a five year planning horizon.

3.12 Flight System Integration Manager: Lead flight integration and utilization manager responsible for the formulation of recommended HEDS flight planning products and utilization and products and for oversight of implementation of approved flight planning and utilization policy.

3.13 SSUB WG: Members of group delegated the responsibility to represent their management (Enterprise Codes M,S,Y and U) concerning the development and production of ISS utilization products. WG membership can includes individuals representing specific technical, engineering, scientific or commercial interests.

3.14 WG: Working Group. See definitions 3.2 and 3.3. Within OLMSA, includes members from the Divisions for Life Sciences (Code UL), Microgravity Research (Code UG) and Space Utilization and Product Development Division (Code UM).

4. **Reference Documents**

4.1 Memoranda of Understanding between NASA and the International Partners in the International Space Station Program, February 1998

4.2 Medical Policy Board's Medical Policies Document, Revision IV

4.3 NPD 1000.1, NASA Strategic Plan

4.4 NPD 7100.8, Protection of Human Research Subjects

4.5 NPD 8910.1, Care and Use of Animals

4.6 Office of Life and Microgravity Science and Applications Policy on Review, Selection and Support of Research, September 1998

4.7 U.S. Partner Utilization Plan (Current Version)

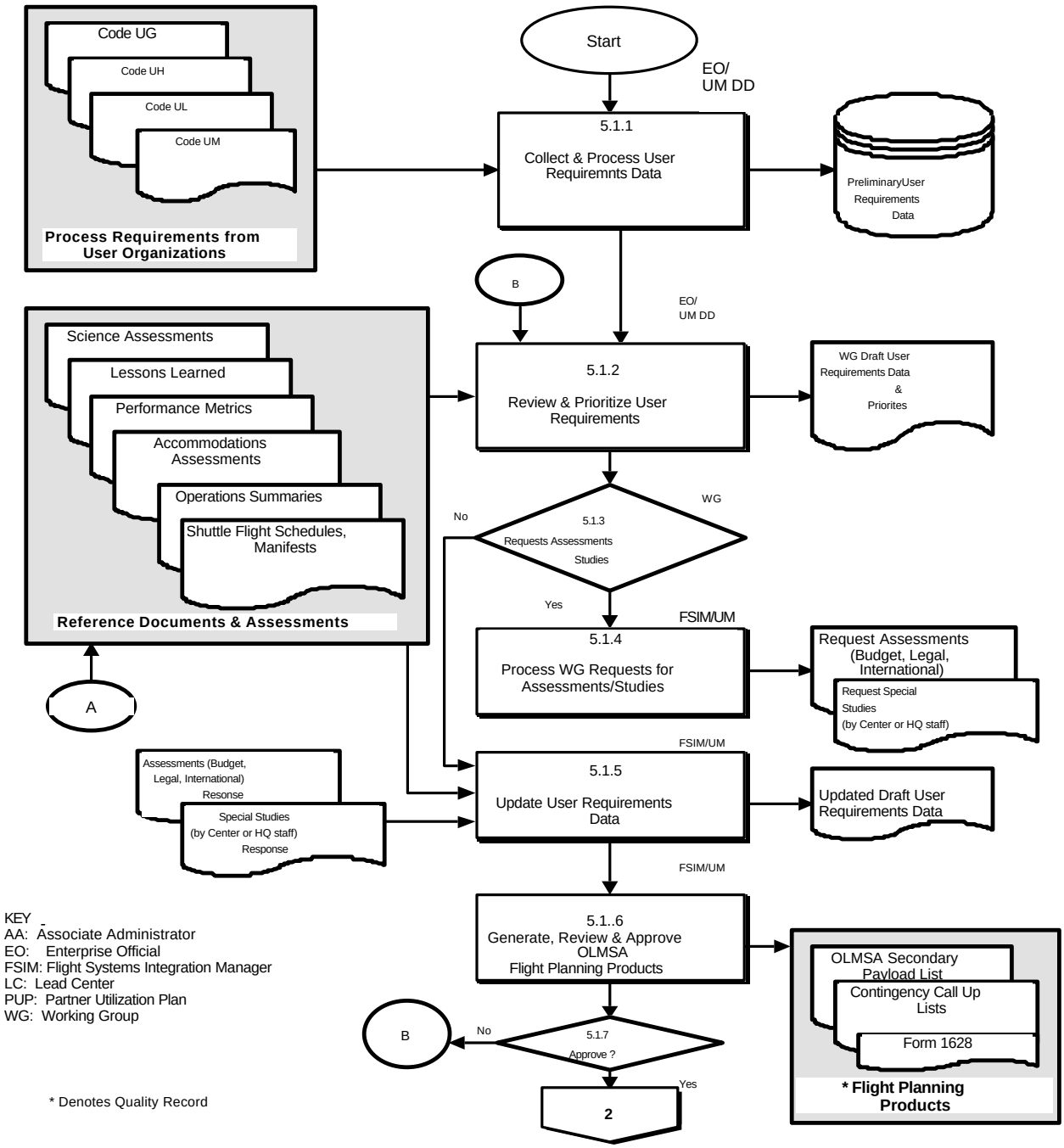
4.8 Space Station Utilization Board Charter

4.9 Memorandum of Understanding between NASA and International Partners

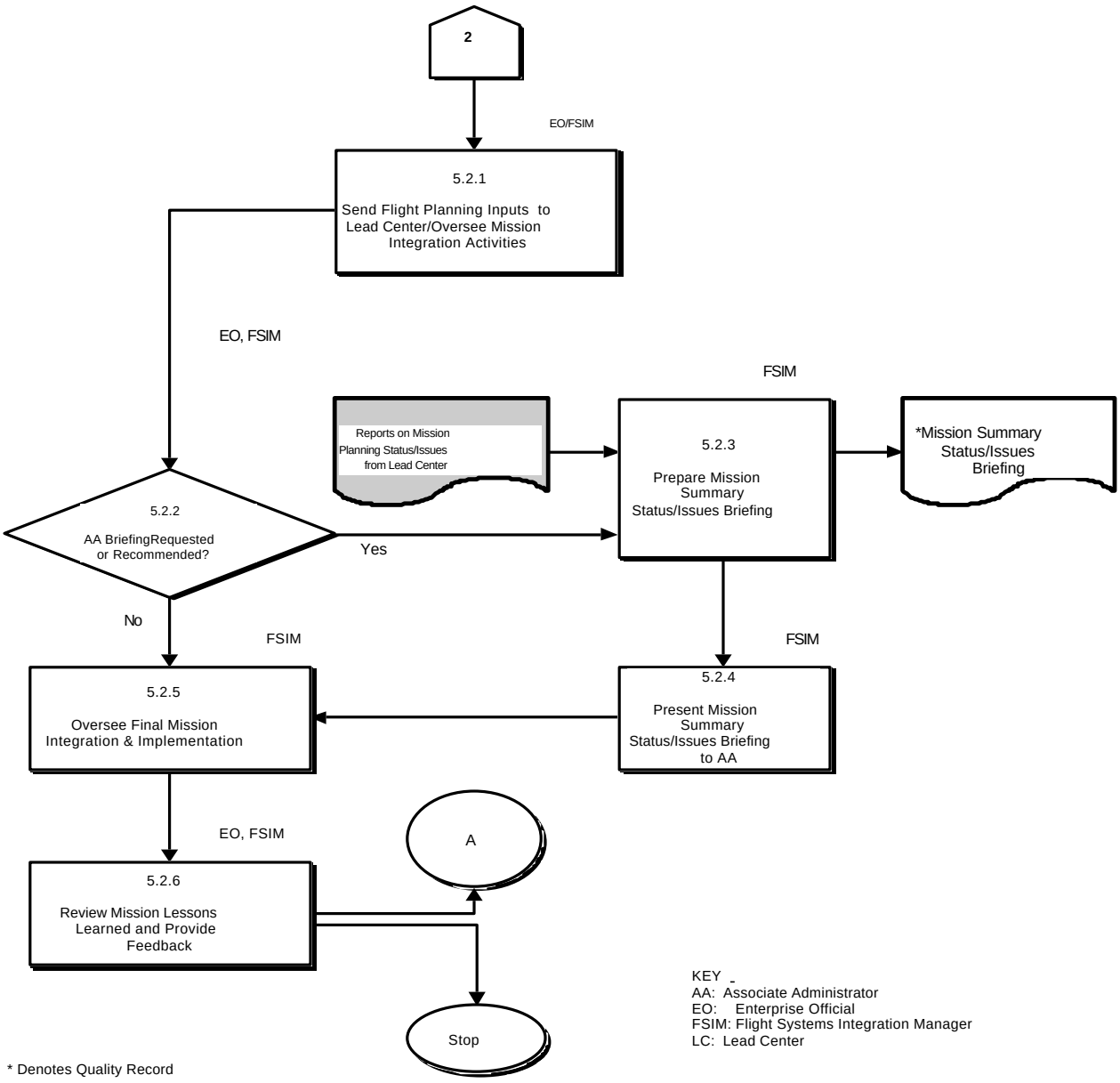
4.10 HOWI 8683 – M019 Code M Traffic Model Planning Process for the International Space Station

5.0 Process Flow

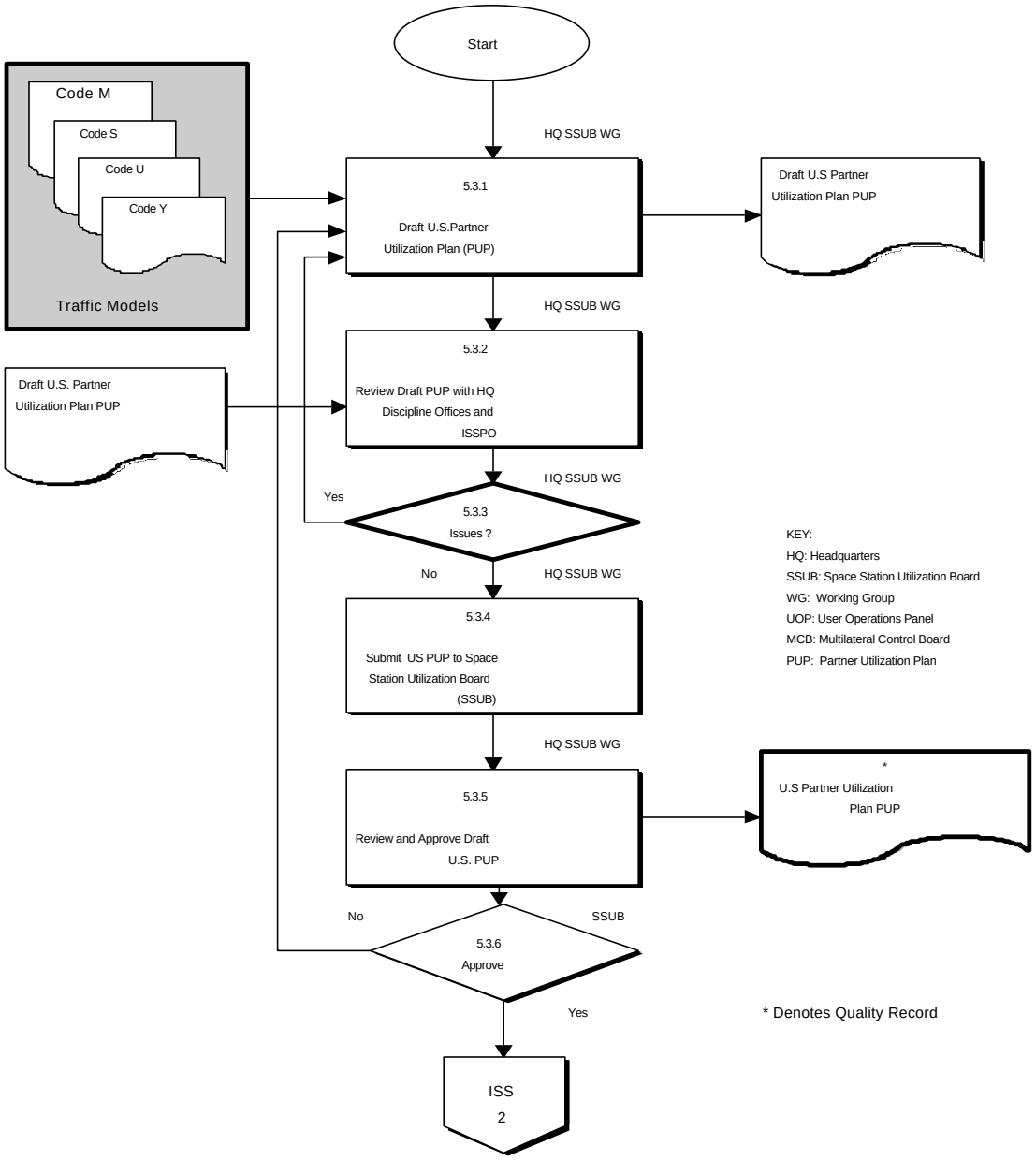
5.1 OLMSA Payload Planning Process



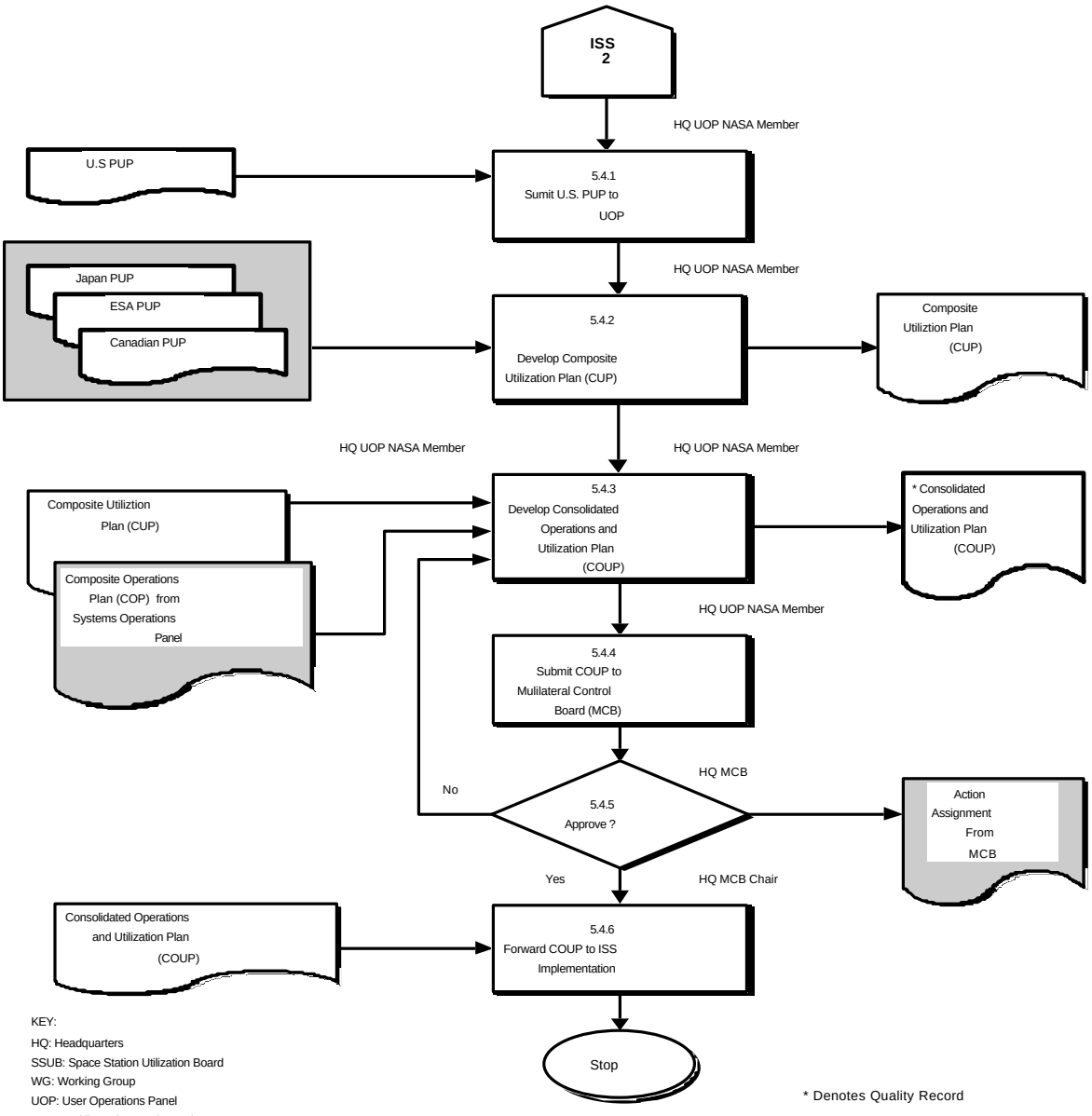
5.2 Oversight of OLMSA Flight Integration and Strategic Utilization Products



5.3 ISS US Partner Utilization Planning Process (PUP)



5.4 ISS Composite Utilization Planning Process (COUP)



6. Procedure

The following table describes the process depicted in the flowchart in Section 5. The number at the left of the table corresponds to the numbers in the activity boxes in the flowchart.

#	Responsible Official	Activity Description
5.1		**OLMSA Payload Planning Process/Oversight Process**
5.1.1	Enterprise Official (UM/Division Director)	Collect user requirement data from user organizations (OLMSA Research Discipline Divisions) and begin processing into Flight Planning Products. Maintain the user requirements data in a computer file format. This preliminary user data is repeatedly updated throughout the planning process.
5.1.2	Enterprise Official (UM/Division Director or Discipline Representative))	Review and prioritize user requirements. Request, perform technical studies and issue assessments: The Director of Code UM or his designated representative convenes a meeting of the Working Group (WG) comprised of representatives from the user organizations. The Director of Code UM or his designated representative chairs the WG. The WG includes OLMSA Research Discipline Divisions and other user organizations (See Section 3.3). Other user group members collaborate and coordinate, if necessary, in the process of formulating OLMSA user member payload requirements. Codes UG, UL and UM are represented in the Working Group that reviews and prioritizes OLMSA user requirements for the SSP and ISS. The WG reviews the integrated sets of payload requirements submitted by the user organizations and draft Flight Planning Products, adjudicate priorities, and consolidate the requirements for the Flight Systems Integration Managers. These documents provide detailed information on results of prior Space Shuttle missions, flight schedules and the availability of user resources planned on future STS and ISS missions The WG provides the draft user requirements data and requests for assessments or studies material to the HEDS FSIM for further processing.
5.1.3	WG (Convened by FSIM)	Request for assessments or studies: WG communicates to the FSIM requests for technical studies or assessments. OLMSA staff, contractors or NASA Field Center staff; depending on the subject matter of the study or assessment, perform the studies. Normally, OLMSA staff, working in coordination with the cognizant NASA Headquarters staff offices completes assessments of non-technical issues (budget, legal or international). If the result is a request for assessments or studies the FSIM processes the requests (Step 5.1.4). If there are no requests by the WG, proceed to step 5.1.5.

#	Responsible Official	Activity Description
5.1.4	Flight Systems Integration Manager (UM/FSIM)	The FSIM processes WG requests for assessments or studies and performs oversight activities coordinating the response. These requests typically fall into two categories: 1. Non-technical: HQ request for assessments (Budget, Legal, International) 2. Technical requests: special studies (by Center or HQ staff)
5.1.5	Flight Systems Integration Manager (UM/FSIM)	Update the user requirement data and Flight Planning Products based on the results of the studies and assessments. Coordinate updates with the members of the WG, as appropriate, and determine if additional meetings of the WG are required to review the updated Flight Planning Products. Produce updated draft User Requirements Data (Flight Planning Products): FSIM refers to documents from NASA Field Center organizations, including Science Assessments, Operations Summaries, Lessons Learned reports, Metrics Evaluations, Tactical planning models, Shuttle flight schedules and manifests, and technical studies and assessments. The FSIM coordinates with representatives from the Office of Space Flight to ensure flight planning utilization issues are resolved and to ensure proposed OLMSA user requirements planned on STS and ISS flights are consistent with the decisions and policy directed by HEDS Associate Administrators.
5.1.6	Enterprise Official	Generate final Flight Planning Products. Present to HEDS Associate Administrators for approval, as appropriate. Rework, as required, to obtain AA approval.
5.1.7	AA	The OLMSA AA approves Code U flight planning products, which include the OLMSA Secondary Payload List, Contingency Call Up Lists and Form 1628s. If the flight planning products are approved then the process proceeds to the development of the U.S. Partner Utilization Planning Process. If flight-planning products are not approved, the process goes to step 5.1.2.

#	Responsible Official	Activity Description
5.2		**Oversight of OLMSA Flight Integration and Strategic Utilization Products**
5.2.1	Enterprise Official (Associate Administrator), FSIM	Send Flight planning Inputs to Lead Center/Oversee mission integration activities
5.2.2	Enterprise Official (Associate Administrator), FSIM	Request briefing on mission status and issues. FSIM may also re-commend a briefing. If a briefing is not requested or re -commended, go to step 5.4.5.
		If briefing is requested, go to step 5.4.3.
		The purpose of the briefing is to inform the AA about important research and safety issues in preparation for his/her participation in the mission Flight Readiness Review. The briefing also provides information that the AA may use in pre-mission briefings to the NASA Administrator.
5.2.3	FSIM	Prepare Mission Summary Status/Issues Briefing:
		Review status reports from the Lead Center and HQ Offices, as appropriate. Prepare Summary Status/Issues Briefing.
5.2.4	FSIM	Present the Mission Summary Status/Issues Briefing to the Associate Administrator. The briefing includes a report on any issues relating to crew safety, use of human research subjects, and/or use of animal research subjects.
	Enterprise Official (Associate Administrator) FSIM	Initial cover sheet of the briefing. After receiving the briefing, the AA may choose to discuss concerns or issues with cognizant officials at the Lead Center or to brief the NASA Administrator.
		File copy of briefing with initialed and/or noted cover sheet.
5.2.5	FSIM	Participate in final flight preparation and implementation conducted at the Field Center level. This includes participation in STS and ISS Flight Readiness Review Boards and other key program reviews as well as missions re-planning and mission management activities, which occur during flights.
		Provide mission management oversight and request mission reviews, as appropriate.
5.2.6	Enterprise Official (Division Director), FSIM	Review Mission Lessons Learned and Performance/Mission objectives and metrics. Incorporate relevant information in requirements planning and integration activities.

#	Responsible Official	Activity Description
5.3.		**ISS US Partner Utilization Planning Process (PUP)**
5.3.1	HQ SSUB Working Group	Current Code S, Y, U and M Annual traffic models are used to initiate the development of the consolidated draft U.S. Partner Utilization Plan (PUP).
5.3.2	HQ SSUB Working Group	Review draft U.S. PUP with Headquarters discipline offices and ISSPO to ensure that it is consistent with Headquarters priorities and ISS resource capabilities. A higher fidelity review of the preliminary consolidated PUP takes place by WG members, representing the Enterprises, to identify possible conflicts or issues.
5.3.3	HQ SSUB Working Group	If issues or concerns are identified, members of the SSUB WG coordinate with their management to update their input into the consolidated U.S PUP and forward their update for processing in step 5.3.1. If no issues or concerns are identified, proceed to the next step.
5.3.4	HQ SSUB Working Group	HQ SSUB Working Group Submits the draft U.S. PUP to the Space Station Utilization Board (SSUB) for review and approval by the Headquarters Associate Administrators.
5.3.5	HQ SSUB	Review and approve the draft U.S. PUP: If, after review, the SSUB opts not to approve the SSUB WG's draft U.S. Partner Utilization Plan recommendation, it must be reworked, reinitiated in step 5.3.1, and resubmitted to the SSUB. If, after review, the SSUB approves the recommended PUP, It is transmitted to the User Operations Panel UOP NASA member.
5.3.6	HQ SSUB	SSUB approval produces the U.S PUP. The U.S. PUP is forwarded to the User Operations Panel to deliberate upon to work Strategic level ISS partner utilization matters. If it is not approved, actions are assigned to SSUB WG members to coordinate a response to redraft the PUP in step 5.3.1.

#	Responsible Official	Activity Description
5.4		**ISS Consolidated Utilization Planning Process (COUP)**
5.4.1	HQ UOP NASA Member	Submit U.S PUP to the User Operations Panel UOP for consideration with the partner PUPS.
5.4.2	HQ UOP NASA Member	Develop Composite Utilization Plan: User Operations Panel (UOP) reviews the U.S. PUP received from the HQ SSUB and together with the PUPS provided by Japan, ESA, and Canada, ensures that each partner stays within its resource allocation, and develops Composite Utilization Plan (CUP).
5.4.3	HQ UOP NASA Member	Develop the Consolidated Operations and Utilization Plan (COUP): The Composite Utilization Plan (CUP) from the User Operations Panel and the Composite Operations Plan (COP) from the Systems Operations Panel are combined to form the Consolidated Operations and Utilization Plan (COUP). The COUP documents the allocation of ISS partner utilization resources and the strategic operational environment of the ISS.
5.4.4	HQ UOP NASA Member	UOP submits COUP to Multilateral Control Board (MCB) for review and evaluation. The MCB is a top level ISS International Partner Control Board.
5.4.5	MCB	Review and approve recommended COUP. If the MCB does not approve the COUP it must be reworked by the User Operations Panel, and resubmitted in the process flow, as appropriate, for resolution. If the MCB approves the COUP, processing continues.

7. **Quality Records**

Record Identification	*Owner*	*Location*	*Media Electronic/ Hard Copy*	*Schedule and Item Number**	*Retention/ Disposition*
Flight Planning Products: OLMSA Secondary Payload Lists Contingency Call-Up Lists NASA Form 1628, Request for Flight (for OLMSA only)	Flight Systems Integration Manager (FSIM)	Code UM	Hard Copy	Schedule 7, Item 4.A	Permanent Retire to FRC when 5 years old. Transfer to NARA when 10 years old.
Mission Summary Status/Issues Briefing	FSIM	Code UM	Hard Copy	Schedule 7, Item 5.E	Destroy when 2 years old
US Partner Utilization Plan (PUP)	FSIM	Code UM	Hard Copy	Schedule 7, Item 4.A	Permanent Retire to FRC when 5 years old. Transfer to NARA when 10 years old.
Consolidated Operations and Utilization Plan (COUP)	Code ML	Code ML	Hard Copy	Schedule 7, Item 4,A	Permanent Retire to FRC 5 yrs after

* Quality Records are retained in accordance with the referenced schedule and item number from NPG 1441.1, *NASA Records Retention Schedules*